

REMARKS

The Office Action dated December 6, 2004, has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claim 3 has been canceled, claim 1 has been amended, and new claims 6-8 have been added. No new matter has been added. Support for the amendments to claim 1 and new claims 6-8 can be found in at least paragraph [0016] and Fig. 1 of the specification as originally filed. Claims 1, 2 and 4-8 are pending and respectfully submitted for consideration.

Claims 1-4 were rejected under 35 U.S.C. § 102(a) as being anticipated by Komiyama (U.S. Patent No. 6,457,627 B1).

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as being anticipated by Fogal (U.S. Patent No. 5,662,261).

Claim 5 was separately rejected under 35 U.S.C. § 103(a) as being unpatentable over Komiyama.

To the extent that the rejections remain applicable to the claims currently pending, the Applicant traverses the rejections and respectfully submits that Komiyama and Fogal fail to disclose or suggest all of the claimed features of the invention, and therefore, also fail to provide the non-obvious advantages provided by the invention.

As a result of the claimed invention, detachment of a wire from an electrode can be prevented. With the prior art, wire is typically detached from the electrode because second bonding is achieved by so-called stitch bonding, specifically, by deforming a

wire with pressure applied thereto under the face surface of the capillary. Accordingly, the prior art such as Komiya and Fogal disclose second bonding to connect a wire to the post portion of an external electrode, but do not address the issue of preventing detachment of a wire from a top-surface electrode of a semiconductor device. Moreover, with the issue of preventing detachment not addressed, the cited references, therefore, do not disclose or suggest that the width of a face surface in the direction perpendicular to an axis of the capillary is greater than a width of the semiconductor device, as recited in claims 1 and 6.

Claim 1 recites, a capillary used to first bond a wire to an external electrode and then bond the wire to a top-surface electrode of a semiconductor device. In contrast, the capillary disclosed in Komiya and Fogal first performs first bonding on an electrode pad on a semiconductor device and then performs second bonding on the post portion of an external electrode. See column 7, lines 28-65 and Figs. 3A and 3B of Komiya, and column 3, lines 7-36 and Figs. 2-5 of Fogal. As such, the steps of wire bonding disclosed in Komiya and Fogal is the opposite of that recited in amended claim 1 of the present invention.

According to U.S. patent practice, a reference must teach every element of a claim in order to properly anticipate the claim under 35 U.S.C. §102. In addition, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “Every element of the claimed invention must be arranged as in the claim . . . the identical invention, specifically, [t]he identical invention must be shown in as

complete detail as contained in the claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989) (emphasis added). Accordingly, Komiyama and Fogal do not disclose or suggest at least the combination of a capillary used to first bond a wire to an external electrode and then bond the wire to a top-surface electrode of a semiconductor device, and a capillary that, when seen in a side sectional view including the axis of the capillary, has a width of the face surface in a direction perpendicular to the axis of the capillary but is greater than a width of the semiconductor device as recited in amended claim 1. Accordingly, Komiyama and Fogal do not anticipate claims 1, 2, and 4 nor are claims 1, 2, and 4 obvious in view of Komiyama and Fogal. As such, the Applicant submits that claims 1, 2, and 4 are allowable over the cited art.

With respect to the obviousness rejection of claim 5, the Applicant respectfully submits that Komiyama fails to disclose or suggest the claimed features of the invention. Claim 5 depends from claim 1. As Komiyama does not disclose or suggest the features of the invention as recited in claim 1, the reference does not support a *prima facie* case of obviousness of dependent claim 5.

Further, the Applicant notes the Office Action statement "It would have been obvious to one of ordinary skill in the art at the time of the invention [sic] the pressure applied depend on wire thickness. A 250 micron wire will receive a load in the range between 100 and 200 g/cm<sup>2</sup>." See paragraph 5 of the Office Action. The Office Action took the position that a 250 micron wire will receive a load in the range of 100 and 200 g/cm<sup>2</sup>, but did not provide any basis for this statement, nor is there any disclosure in Komiyama of a 250 micron wire. As such, there is no support in Komiyama, nor a

motivation provided in the Office Action for a *prima facie* case of obviousness of claim 5. Accordingly, as Komiyama and Fogal fail to disclose or suggest each and every feature of the claimed invention, the Applicant respectfully submits that claims 2 and 4-8 are allowable over the cited prior art. The Applicant therefore requests allowance of claims 2 and 4-8 and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing Attorney Dkt. No. 103213-00055.**

Respectfully submitted,

  
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Enclosure: Petition for Extension of Time (two-month)

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